How to Get 3,000 Pounds of Beef Jerky from Reno to Seattle

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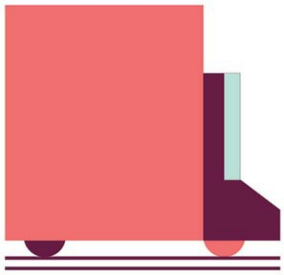
By Michael Lenehan Illustrations by Muti



Jose Molina has a call in his headset, another on hold, and one coming in for his assistant, Enrique, who has stepped away from his desk. A trucker in the suburbs is calling to bid on a load from Libertyville to Nashville. A driver who had to pay for helpers to unload his trailer wants to be reimbursed. A truck is stuck at a weigh station in South Dakota with a cop who insists the driver doesn't have the right permit to carry liquids. Molina juggles the calls with an assortment of canned phrases that he speaks so quickly they're almost unintelligible: "PleaseholdIllberightwithyou." "ThanksforholdingwhatcanIdoforyou?"

He is 31, dark and good-looking, bearded and beefy, with a huge handshake and a big grin. Dressed in a T-shirt, jeans, and sneakers, he could be a trucker himself, but the rig he's driving consists of a computer, a cell phone, two desk phones with four incoming lines, and a double monitor on which he is shuffling a bewildering variety of windows. One shows dozens of loads available from Bridgeport, Connecticut. Another is a panel of four instant message conversations he's having with colleagues elsewhere in the building.

Click, zoom, here's a map of the route from Bridgeport to Tampa. And here's a "load editor" that contains all the information he needs to complete an order: the point of origin, the destination, the contents, the weight, the packaging (boxes? drums? pallets?), the price the customer is paying for the shipment, the amount Molina can offer the carrier, the specified pickup and delivery times. Is there anything special the driver needs to do when he arrives at the loading dock? When will the gate be open? It's all here.

Click, zoom, here's a profile of the carrier. How many trucks does it run and what kinds? What's its performance record? How much insurance does it have?

Click, zoom, here's an email from a trucking company Molina works with regularly: a list of drivers and their hopes for the next few days. Jeff in Bridgeport "needs money and miles." Frank in Hicksville, New York, wants to go "straight to Orlando, no questions."

As he moves from screen to screen and phone to phone, Molina switches between English and Spanish: from "Thanks, brother" to "*Perfecto, gracias*," from "Atlanta, Georgia" to "*Atlonta, Yore-iya*." He can speak Spanish into the phone while typing English into a message. With a click and a tap, he copies a carrier's number and pastes it into the load editor, then sends a confirmation email to the trucking company. Four forklifts weighing 27,000 pounds and valued at $99,000 have just been dispatched to Eagan, Minnesota. Jeff will get his miles. No sooner does Molina finish off that arrangement with his right hand than he punches up a chortling phone line with his left. "EnriqueslinehowcanIhelpyou?"

Truckers want loads, and Jose Molina is a guy who's got them. He's what they call a senior carrier sales rep at C.H. Robinson Worldwide, a Fortune 500 company and Chicago's biggest player in a huge industry you've probably never heard of: logistics—more specifically, third-party logistics, or 3PL.

What is it? Maciek Nowak, an associate professor of supply chain management at Loyola's Quinlan School of Business, likens the business to a dating service for freight: Basically, a 3PL matches shipments with carriers. Robinson doesn't own trucks, planes, railcars, or ships, but it arranges shipping by all these modes for more than 100,000 companies around the world. It is one of the biggest 3PLs in the country and by some estimates the biggest logistics employer in Chicago, with about 2,000 workers in eight locations in the area. The company is headquartered in Eden Prairie, Minnesota, but the "Chicago Central" office—a low, inconspicuous buff-brick building on the 1800 block of North Marcey, on the industrial western fringe of Lincoln Park—is its biggest and the flagship of

its core division: North American Surface Transportation. That means trucking, mostly, and it accounts for about two-thirds of Robinson's annual revenue, which in 2015 was $13.5 billion.

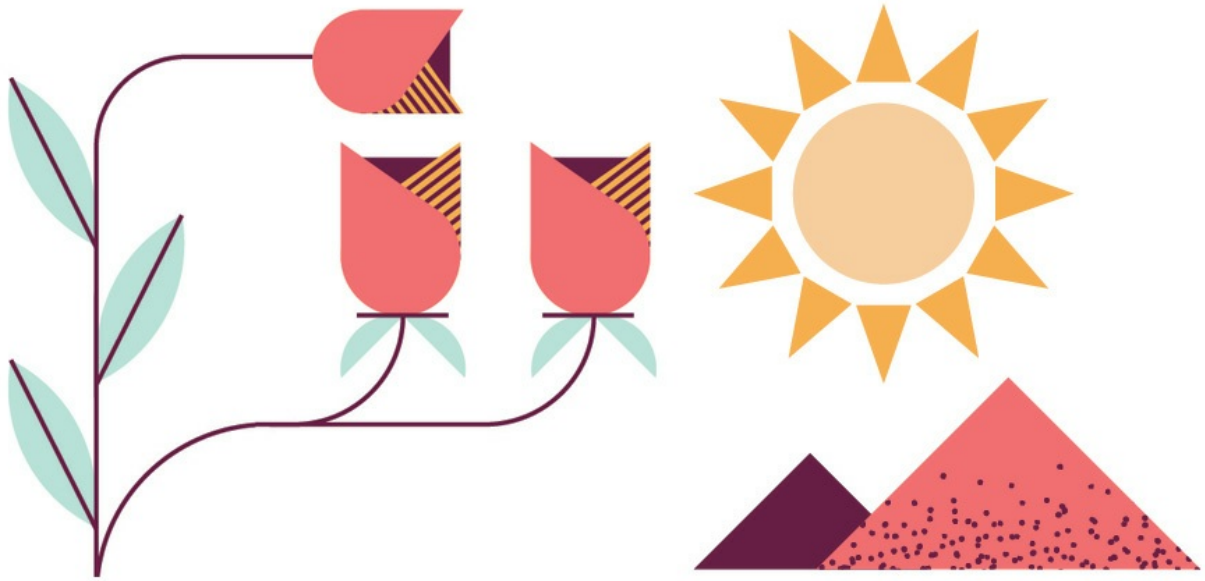
Logistics, of which 3PL is just a part, is big business globally, with revenues of about $8.1 trillion in 2015, according to one estimate, nearly 11 percent of the world's gross domestic product. Chicago is an industry nexus. According to figures compiled by the development group World Business Chicago, more than a thousand logistics companies operate in the metro area, employing upward of 20,000 workers here.

Some of those workers train for the job out of college and come up through the ranks. Others migrate to the industry via unlikelier routes. Molina, the son of Mexican immigrants, got a marketing degree from California Polytechnic State University in San Luis Obispo and worked as a copywriter for a few years, then came to Chicago in 2010 to break into the city's improv comedy scene. He figured he'd make rent by waiting tables or tending bar, but his roommate brought him to Robinson, and from the moment he saw a guy doing what Molina does now—seven things at once—he knew this was the business for him. It was like improv: the need to process multiple channels simultaneously, to listen carefully while scanning options for the next step, to recall seemingly insignificant details, to make a decision in an instant and move on.

He went through Robinson's training program, took a seat at a desk, and on his first day answered a phone call from a one-truck operator who was looking for a load. The driver had a brother who also owned a truck. And they both knew other guys who owned trucks. One contact led to another, and Molina began to grow a "book of business" (everyone at Robinson has one) that's thick with trucking companies in Florida. Many of them are small operations with four or five rigs: The husband serves as dispatcher, the wife handles billing and payroll, and when their son turns 18, he gets a license and joins the fleet. Molina speaks their language and gets to know them as family. If a driver needs to be home for his kid's birthday, Molina tries to make it happen.

Today, after five years at Robinson, he is one of Chicago Central's top carrier reps. And because one verse of the Robinson mantra is "pay for performance" (Robinson people tend to avoid the term "commission"), he is also one of Chicago's most comfortable improv comedians. (His team, Big Spoon, performs three or four times a month at the iO Theater on Kingsbury Street.)

Related: How Logistics Helps Mom Get Her Roses in Time For Mother's Day



When you first enter Chicago Central, it seems sedate. But behind the reception desk, beyond a pair of formidable wood doors, a vast, high-ceilinged room thrums with the activity of about 900 people—row upon row of cubicle desks, monitors, headsets, and workers as far as the eye can see. They are mostly young, all shapes and colors, dressed up for an after-work rendezvous in Bucktown or down for an afternoon game at Wrigley Field. It doesn't seem to matter.

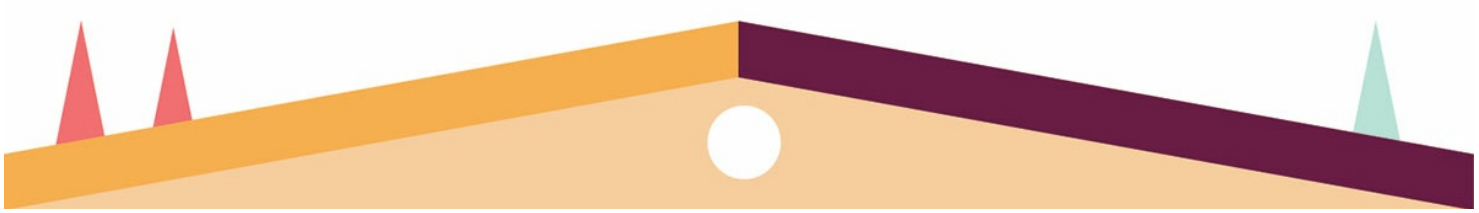
About 50 yards from Molina's desk, on the other side of the room and the other end of the 3PL equation, sits Cailie Furlong, 24, a graduate of the University of Iowa who started at Robinson as a summer intern and signed on for good about two years ago. She's a customer sales rep. While Molina deals with trucking companies, she deals with companies that need trucks. Right now she's got an email from a food bank in Oregon that wants to send 40,000 pounds of carrots to another food bank in Arizona. Using the same computer platform Molina does, she looks up the route—the "lane," they call it—and sees it's about 1,200 miles, a little more than 30 hours. (That's taking into account federal regulations requiring drivers to take 10 hours off after 11 on the road.) She knows this job will necessitate a refrigerated truck—the carrots will survive the trip if kept around 35 degrees.

She sends an instant message requesting a price quote to a Robinson desk that specializes in refrigerated shipments. A few minutes later, she gets a reply telling her what Robinson would have to pay for the load, based on its carrier contracts. Furlong picks up a calculator, figures a markup, and adds a little bit as risk insurance because Oregon has been buried in snow. She emails her quote to the food bank, gets back an acceptance, and enters the particulars into the system. The carrot order will pop up on a list of available shipments, and one of Molina's colleagues on the carrier side will see it and find a truck. Or maybe a trucking company dispatcher will log on to Robinson's web system and see it there. Or a driver will see it on Robinson's smartphone app for carriers. In any event, Furlong is already on to the next thing, an email from a customer who wants to ship a few 580-pound pallets of beef jerky from Nevada to Washington State. What rate shall she apply? She pulls up a beef jerky density calculator.

Meanwhile, in the middle of the immense room, near where the bosses sit, the "business intelligence group"—a team of 11 analysts, data scientists, and process engineers—sift through crop reports, weather data, economic projections, and the thick veins of information buried in the thousands of orders that Robinson processes each day, looking for trends or problems or developments that might affect the business. When will melons ripen this year? If spring comes early, trucks will need to be moved toward the fields. What's the outlook for housing starts? If it picks up, many drivers will shift to construction work and shipping rates will have to increase. Is Ford going to open those plants in Mexico or not? Why are so many trucks going to Phoenix this week?

And so it goes all day long, the customer reps on one side, the carrier reps on the other, the big-picture guys in the middle, and connecting them all a fast and enormously powerful software platform on which more than 14,000 employees spread over five continents can see the details of any shipment in the system. Robinson deals in invisible things: service and software—or, as the company likes to say, "people, processes, and technology."

In a word, it's a network. The freight Robinson handles doesn't come within miles of this office; typically, it is not touched or even seen by any employee. Yet you can stand in the middle of the room, between the shippers and the truckers, and almost feel the stuff of the nation humming through the ether: carrots and beef jerky, steel and elevator parts, candy and sports drinks, furniture, flowers, and footwear—about a billion dollars' worth of goods every week.



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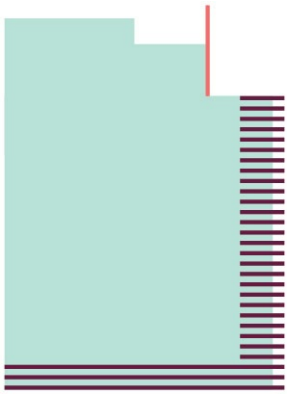


Chicago has been a transportation hub since the last glaciers retreated about 13,000 years ago, leaving the Chicago Portage at what is now roughly 31st Street. There, Native Americans could carry their canoes from the South Branch of the Chicago River to the easternmost lick of the Des Plaines, thus connecting the Great Lakes with the Mississippi River and points south and west. Today Chicago is one of the few places in the country where the great rail networks of the east, the Norfolk Southern and CSX, meet those of the west, the BNSF and Union Pacific, as well as the rail lines from Canada. And the Chicago area (including northwest Indiana) is served by more primary interstate highways —the ones with one- and two-digit names—than any other city. All in all, according to the Chicago Metropolitan Agency for Planning, a fourth of the freight shipped in the United States starts in, stops at, or passes through Chicago. That the city became a major center of the logistics industry is a natural extension.

Third-party logistics barely existed 40 years ago. Before 1980, trucking was strictly regulated by the federal government. If you wanted to ship mattresses, say, from Chicago to Sheboygan, Wisconsin, your choice of carriers would be limited, their rates would all be the same, and the truck that carried your goods would likely have to "deadhead" home with an empty trailer. Deregulation eliminated a lot of the rules and made it easier for new companies to get into the trucking business. As the number of carriers mushroomed, a new class of brokers, 3PLs, sprang up to connect them with shippers and fill those empty trailers with "backhauls." At the same time, computers were entering the picture, Japanese automakers were schooling U.S. manufacturers in techniques like "just in time" delivery of parts and materials, and a vast pool of cheap labor was opening overseas, creating an unprecedented demand for the transportation of goods and materials from abroad. By the late '90s, a pioneering Chicago firm called American Backhaulers had developed software to match trucks with loads and had attracted a talented bunch of strivers who dominate the 3PL business here to this day.

Founded in 1905 in North Dakota as a broker of fresh produce, C.H. Robinson was already a behemoth of the trucking industry by this time. Because their cargo was perishable, produce truckers were exempt from most of the regulation that held back the rest of the industry. So Robinson had a huge head start in the business of brokering trucks and matching loads. Employee-owned since the mid-1970s, it went public in 1997. Two years later, it acquired American Backhaulers for what now seems like a paltry $136 million. Since then the company has been growing fast and acquiring aggressively—and so has its competition. Several of the people who worked at American Backhaulers are now top execs at Robinson. And several of those who aren't have spun off 3PLs of their own, bolstering Chicago's role as an industry hot spot.

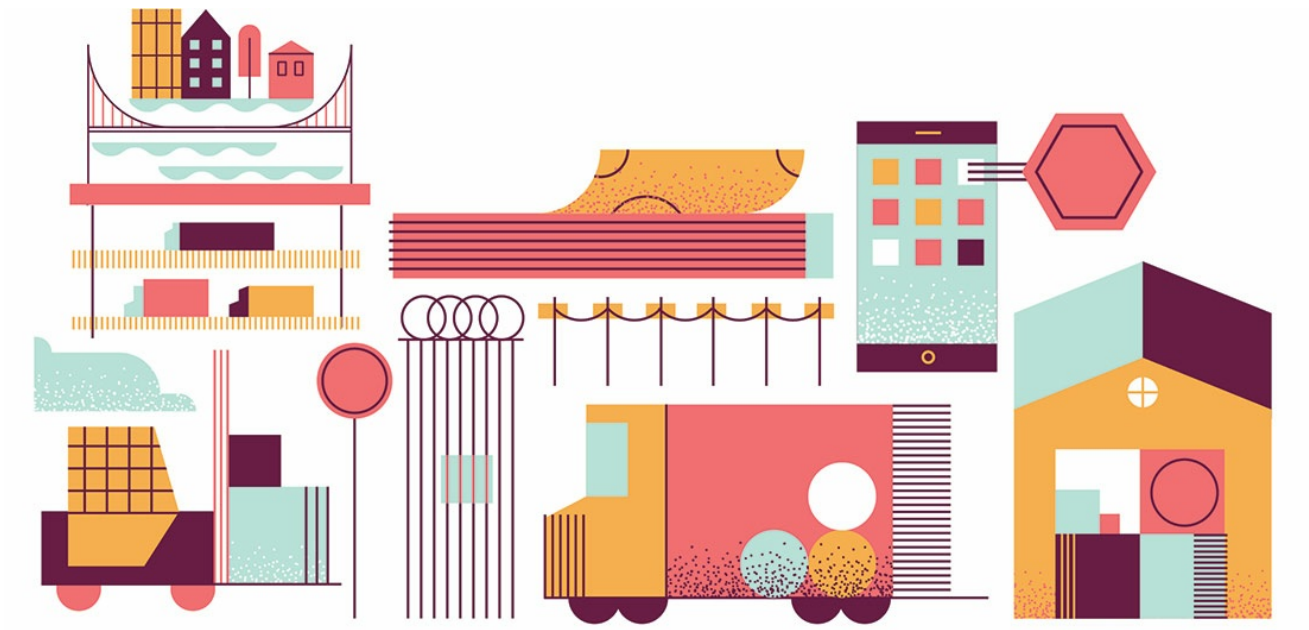
A few miles from Chicago Central, in a converted paint factory in the meatpacking district of the West Loop, another division of Robinson works with more esoteric concepts, like predictive analytics and artificial intelligence. TMC (the initials stand for Transportation Management Center, but nobody calls it that anymore) is the brainchild of Jordan Kass, a member of the American Backhaulers diaspora. When Robinson bought that company, Kass talked his new bosses into bankrolling an alternative to their 3PL model. In a way, TMC is Robinson's hedge against the future.

If Chicago Central looks and feels like a trading room, TMC is a tech startup. The office is full of transport-themed art and reclaimed wood and has a rooftop deck that offers a spectacular view of the Loop. In one conference-size room, a lone engineer sits surrounded by four walls of pinned-up task lists, flow charts, and multicolored spreadsheets that visualize customer John Deere's efforts to optimize its six-continent supply chain. In another space, software engineers work quietly, writing algorithms that fit loads into trailers and sort through routes and rates and commodities and dates to choose the best carrier for any given shipment.

The idea at TMC is to put Robinson's software platform, called Navisphere, directly into the hands of companies—usually "the biggest of the big," says Kass—that want to use it for themselves. Instead of taking a commission on each transaction, as Kass's colleagues at Chicago Central do, TMC offers tailored versions of the software on a subscription basis, giving clients the ability to book their own transportation for rates they can negotiate directly with carriers.

During my visit, Kass drew me a picture on a whiteboard to illustrate what TMC does, using one of his favorite customers, Microsoft, as an example. On one side he drew a column of small boxes representing the various ways Microsoft receives its hardware orders—from its websites, its stores, big-box retailers, and online retailers. Next to these he drew a large box representing Microsoft's ERP—"enterprise resource planning"—system, the huge software package that keeps track of orders and inventory, among other things. Next to that, another large box represented TMC's client-accessible version of Navisphere. On the far right, another column of small boxes indicated various carriers or 3PLs that Microsoft might use to deliver a shipment to its destination. Finally, Kass drew a bunch of arrows going back and forth between the two large boxes, and a couple more arrows pointing up (toward the cloud) and back. What they do at TMC is make the arrows.

Let's say Best Buy asks for 10,000 Surface tablets; a kid in Portland buys an Xbox online; an OfficeMax in Skokie orders a dozen Bluetooth keyboards. All orders—up to 700,000 of them on a busy day—are funneled into Microsoft's ERP system and from there into TMC's software, which consolidates the orders, arranges them into shipments, and figures out the best way to complete each one, whether it's five ocean containers going from Shanghai to Long Beach or a single package headed from a Microsoft distribution center in California to an apartment in Lake View. At any time, Microsoft's execs in Redmond, Washington (or anywhere), can look on a computer screen and get a street-level snapshot of any shipment in the system, along with the local weather conditions. Come back in a couple of weeks, Kass says, and you'll be able to see traffic jams as well.



Here are a few more things I learned wandering around Chicago Central and TMC:

1. *There are a lot of trucking companies.* About 580,000, according to the American Trucking Associations. More than 97 percent of those companies operate 20 trucks or fewer. Why hasn't this industry consolidated? One reason is that…

2. *Supply chains are always changing.* Kass showed me a "network map" on an office wall: a graphic representation of a supply chain for one of his customers, Johnson Controls, a major diversified manufacturer. The pattern reminded me of a curving flare, or maybe Conan O'Brien's hair. Three months from now, the shape would look completely different, Kass said. He explained: One of Johnson's big lines is auto batteries; another is HVAC equipment. Let's say the map was made in January, when a lot of car batteries die. Consider what the distribution pattern would look like in July, when construction season up north in is full swing and demand for HVAC equipment is heavier. Or think about how the flow of vegetables out of Mexico changes from April to November.

Some of these factors are predictable—and logistics people predict them as best they can—but some are not: recession, forest fires, El Niño. All this flux militates against the consolidation of the trucking industry, Kass said, by providing plenty of niches where small, independent operators can compete by specializing in certain lanes, regions, or kinds of cargo. And 3PLs make it easier for shippers to deal with them.

3. *Truckers follow the money.* Given that trucking companies are so scattered and independent, how does Robinson get the trucks to go where they're needed? The answer is the great invisible hand of the market. Robinson has contracts with more than 68,000 carriers, but these contracts don't obligate Robinson to offer loads or truckers to accept them. Supply and demand can change by the day or even by the hour; in effect, price is negotiable on virtually every shipment. A week before Mother's Day, a driver will be willing to go to Miami—the country's main entry point for imported flowers—for a very low rate, or maybe even go empty, because he knows he will get a big payday coming back.

This sort of foreseeable seasonal surge is built into the rates in Robinson's computer system. But what happens when a hurricane hits New Jersey? How do you persuade a driver to bring in building materials when he knows he won't be able to get a load coming out? The answer is simple: Pay more.

4. *Driverless trucks are coming.* Kass thinks the driverless truck may eventually have the potential to turn the industry upside down. Humans, after all, are the weak link in the supply chain. They want to go where the jobs are. When things get tough for independent operators, they go to work for a big trucking company. When things get better, they quit and go back to working for themselves. When housing booms, they park their trucks and work construction. And they get tired on the road and need breaks. Also, there aren't enough of them—the American Trucking Associations recently estimated the shortage at close to 40,000 nationally. So, says Kass, when the trucks start driving themselves, that "could be the catalyst for the consolidation of the trucking industry." How many mom-and-pop operations will have the capital or know-how to run a fleet of wheeled robots?

If big shippers like UPS and FedEx take over with the advent of driverless fleets, 3PLs will lose some of their market. With fewer carriers, it will become easier for small and medium-size companies to arrange their own shipping. So if the autonomous truck eliminates drivers, as some fear it will—3.5 million of America's last best blue-collar jobs—it will likely eliminate a few logistics company sales reps, too.

For the time being, though, shipping still needs improv artists like Jose Molina.

About 1 o'clock on a Friday afternoon, Molina gets a call from a trucking company dispatcher who's got a driver stuck in New York City traffic. This driver is supposed to be picking up a load of warehouse equipment in Kirkwood, New York, about 180 miles northwest of Manhattan, but isn't going to make it by the scheduled time. Molina zips off an instant message to the Robinson customer rep who ordered the pickup, citing the load number: "224086366 driver hit a snag and eta to shipper is 16:30-17:00 can we buy him time?" The rep has already informed Molina that this particular shipper is fussy about pickup times and likes to close its gates promptly at 4 p.m. That's Eastern time, two hours from now. She writes back: "nope ain't happening did u not see my emails i sent you? … have anyone

closer? I need it pickup.”

“Checking now,” Molina fires back. He calls up the load on his screen and clicks a link called “Truck Find.” Out spills a long list of rigs sorted by their distance from the shipper. Molina filters the results for a “dry van,” the enclosed trailer type that the order calls for, and for trucks that have reported their location within the last hour so that he can be reasonably sure they are roughly where the system says they are. He spies one that’s supposedly in Pittston, Pennsylvania, about 65 miles from Kirkwood. This truck is owned by a company he has never dealt with. So while he works the mouse with his right hand, he punches a phone number with his left. He reaches a dispatcher and asks about the truck. Has it moved? “Let me check,” the dispatcher says. Molina puts her on hold and picks up another call. He’s working several loads at once, clicking and zooming, scanning his screen, typing his notes.

After about a minute, he is back on the line with the dispatcher. “You do? Awesome! Is he empty? OK, I’ve got a great load here going to Texas. The problem is that I gotta pick up in Kirkwood, New York. I think it’s like 60 miles from you. We’ve gotta get there before 4. You think your driver can do that? … OK, perfect. First stop is gonna be Little Rock, Arkansas, 8 a.m. on Monday. … No problem, take your time.” He laughs. Whenever someone says “I need to check” or “Let me get a pencil,” Molina says, “Take your time.” But he doesn’t mean it.

Another line rings. “PleaseholdIllberightwithyou.” Back to the dispatcher. “Yep, and then the second drop is gonna be Longview, Texas—Longview, one word—at 1:30 p.m. the same day, on Monday. It’s gonna be 35,000 pounds and it’s 1,578 on the loaded miles.”

The dispatcher asks Molina how much he’s paying. Molina checks the load screen to see what Robinson has quoted the customer and how much he is authorized to spend. This is no time to maximize the spread. He throws out a number, lowballing a little because the carriers always ask for more. The carrier asks for more. “Uh, let’s bring it down—I mean, can you meet me?” asks Molina. He suggests another number. “OK, perfect, sounds great. Let me just send you this rate confirmation, and you’re rockin’ and rollin’ here.

He bangs out an instant message to his colleague across the room: “got a truck. rolling now. eta 15:45.” As he types it, he punches a button on one of his phones. “ThankyouforholdinghowcanIhelpyou?”